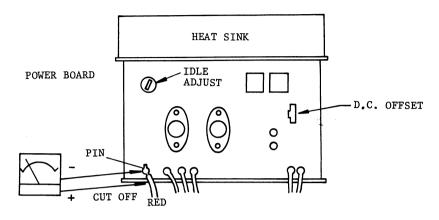


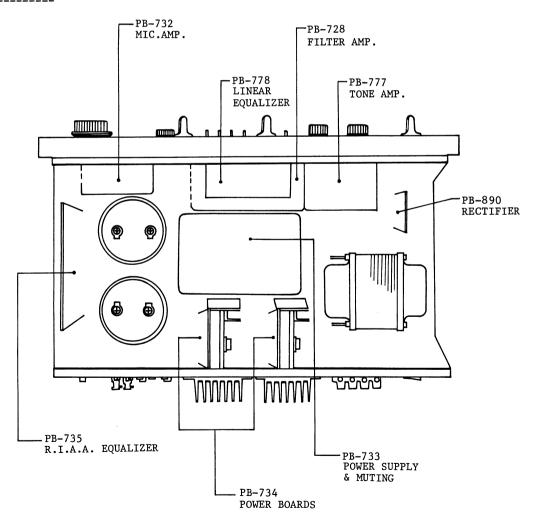
SOLID STATE INTEGRATED AMPLIFIER

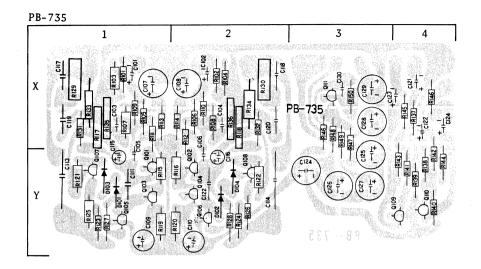
L-309 SERVICE MANUAL

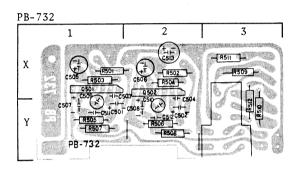


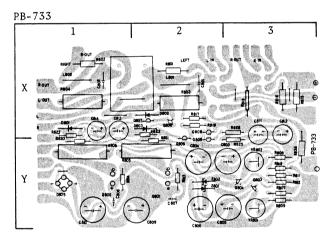
IDLE CURRENT L-309 50mA L-308 50mA

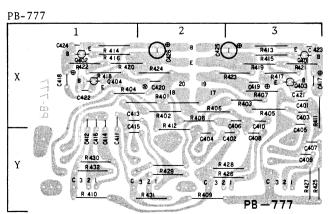
P.B. LOCATION

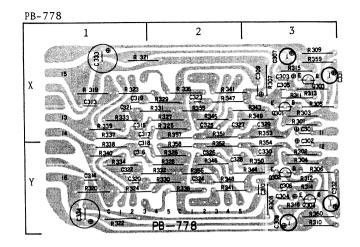


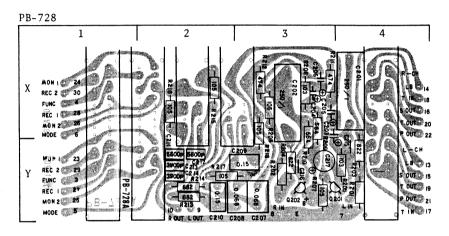


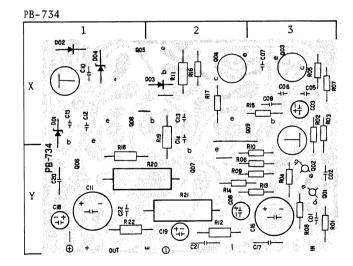












PB-	7	3	5
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_													1
	RlOl	120K		lX	Rl	18	33K	2X	R135	1.2	K	1X	
	102	120K		2 X	1	19	2.2K	lY	136	1.2	K	2 X	
	103	lM		1X	1	.20	2.2K	2Y	137	8.2	K	4X	
	104	1M		2 X	1	21	33K	lY	138	8.2	K	4Y	
	105	560K		lX	1	22	33K	2Y	139	1	.M	4 Y	
	106	560K		2 X	1	.23	330	lY	140	1	.M	4 Y	
	107	12K		lX	1	24	330	2 Y	141	1	М.	4Y	
	108	12K		2 X	1	.25	330	lY	142	1	M	4 Y	
	109	3.9K		lX	1	.26	330	2Y	143	10	K	4Y	
	110	3.9K		2 X	1	.27	560K	lY	144	10	K	4 Y	
	111	180		lX	1	.28	560K	2Y	145	470	K	4 X	
	112	180		2 X	1	.29	39K	lX	146	470	K	4X	
	113	100K		lX	1	.30	39K	2 X	147	330		3Y	
	114	100K		2X	1	.31	lK	lX	148	4.7	K	3X	
	115	47K		lY	1	.32	lK	2 X	149	820		3X	
	116	47K		2Y	1	.33	2.2M	lX	150	10	K	3 X	
	117	33K		lX	1	.34	2.2M	2 X			-		
\vdash						Г						, , , , , , , , , , , , , , , , , , , 	
	C101	2.2uF	10V		1X	C116	33uF	10 V	2Y				
	102	2.2uF	10V		2 X	117	6200pF		1X				
1	103	47pF			1X	118	6200pF		2 X				
	104	47pF			2X	119	1800pF		1X				
	105	100pF			1Y	120	1800pF	0.517	2X				
1	106	100pF	2 011		2Y	121	luF	35V	4 X				
	107	220uF	10V		1X	122	luF	35V	4 X				
	108	220uF	10V		2X	123	0.22uF	35V	4X				
	109	47uF	10V		1Y	124	0.22uF	35V	4 X				
	110	47uF	10V		2Y	125	47uF	50V	3Y				
	111	270pF			1Y	126	47uF	50V	3Y				
	112	270pF	05011		2Y	127	47uF	50V	3Y				
	113	luF	250V		1Y	128	47uF 47uF	50V	3X				
	114	luF	250V		2Y	129		50 V	3X				
L	115	33uF	10V		lY	130	150pF		3 %				
	Q101	2SC1 22	2(2SC13	45)		lY	Q106 2	SC1222(2S	C1345)	2Y	0111	2SC853	3X
	102		2(2SC13			2Y		SA640	/	1Y	D101	SV-03	lY
	103	2SA640		,		lY		SA640		2Y	102	SV-03	2Y
	104	2SA640				2Y	1	SC1222(2S	C1345)	4Y	103	KB-165	lY
1	105		2(2SC13	45)		lY	1	SC1222(2S		4Y	104	KB-165	2Y
L	102	25CT 22	2(25013	437		TI	TT0 2	301227 (22	CI345)	41	1 104	VD-T02	

PB-732

SYMBOL NO. (RESISTORS; +5% 1/4W)

R501	100K	X1	R505	820K	Y1	R509	8.2K	х3
502	100K	X2	506	820K	Y2	510	8.2K	Y3
503	150K	X1	507	68K	Y1	511	39K	Х3
504	150K	X2	508	68K	Y2	512	39K	Y3

SYMBOL NO. (CAPACITORS)

C501	2.2uF	10V	tantalum	Y1	C508	2.2uF	35V		tantalum	Y2
502	2.2uF	10V .	11	Y2	509	22uF	10V		electrolytic	Y1
503	47pF	50V [±] 10%	ceramic	X1	510	22uF	10V		11	Y2
504	47pF	50V "	11	Y2	511	22pF	50V	" 10%	ceramic	Y1
505	47uF	10V	electrolytic	X1	512	22pF	50V	11	"	Y2
506	47uF	10V	11	X2	513	10uF	50V		electrolytic	X2
507	2.2uF	35V	tantalum	Y1						

SYMBOL NO. (IC's)

Q501	TA7122AP	Mic. amp	X1	Q502	TA7122AP	Mic. amp	X2

]	$^{2}B-733$	2												
	SYMBO	L NO. (RESI	STORS	; - 5	5% 1/4W ur	less	note	d oth	erwise))				
Г	R801	10 1/2W			X2	R	810	27K		Y3		R819	1K	X2
T,	802	10 1/2W			X1	-	811	15K		Y3		820	8.2K	Y1
ļ	803	4.7 2W			x2		812	15K		Y3		821	1K	Y2
	804	4.7 2W			X1	1	813	10K		Y2	i	822	180K	X2
	805		vire w	haund	Y2	- 1	814	10K		Y1		823	2.2	X1
-							815	15K		X3		824	100 1/2W	Y3
	806		wire w	ouna	Y1							825	3.3K	Y3
	807	18K			Y3		816	l	1/2W	X3		023	3.36	13
1	808	18K			Y3		817	8.2		X2				
L	809	27K			Y3		818	8.2	.K	Х3				
	SYMBO	L NO. (CAPAC	CITORS	5)										
Γ	C801	0.1uF	50V ±	10%	mylar		X2		C808	0.047uF	50V	+ 10%	mylar	Y1
-	802		50V	11	* 11		X1		809	100uF	100V		electrolyt	ic Y2
	803		63V		electro	lvtic	Y3	-	810	100uF	100V		11	Y1
	804		63V		11	•	Y2		811	330uF	100		**	х3
	805	47uF 10			11		Y3	ı	812	330uF	107		tt	х3
	806	47uF 10			**		Y2		813	100uF	100		11	X1
	807			-10%	mylar		Y2	i	814	22uF	50V		**	X1
Ĺ					myrar									
Г		L NO. (TRAN					770		0006	2001245	(E)		otection circ	uit vo
	Q801	2SD382	1 1	powe	er supply		Y2	l	Q806	2SC1345		pr	otection circ	X2 X2
	802	2SB537			11		Y1		807	2SC853			11	
ı	803	2SC1345					Y3	1	808	2SC945	• . • .		11	X2
	804	2SA640			11		Y3		809	2SC1345	(E)		.,	Y2
-	805	2SA640	(F) p	rote	ction cir	cuit	Y2		ĺ					ĺ
_	SYMBO	L NO. (DIOD	ES)											
Г		IN4003		ecti	fier		X1		D805	W 04	rect	ifier	Y1 Y	71
-	D801	1							Z801	WZ-290				72
ı	802	IK 188F	•		ction		X2	1	I .					2
Ł	803	IN4003	F	prote	ction		X2		Z802	WZ-290	AOTE	age st	abilizer Y	. 2
-		L No. (VARI	ABLE F	RESIS	TORS)									
ſ					TORS) wer suppl	у	¥3		VR802	4.7K-B	for	power	supply Y	73
	SYMBO					у	Y3		VR802	4.7K-B	for	power	supply Y	73
	SYMBO	4.7K-B				у	Y 3		VR802	4.7K-B	for	power	supply Y	73
	SYMBO VR801 PB-77	4.7K-B	fc	or por		у	У 3		VR802	4.7K-B	for	power	supply Y	73
	SYMBO VR801 PB-77 SYMBO	4.7K-B 77 DL NO. (RESI	fc	or pov	wer supp1 % 1/4W)	у R412	Y3	3.3K	VR802	4.7K-B	for	power	supply Y	x3
	SYMBO VR801 PB-77 SYMBO R401	4.7K-B 77 DL NO. (RESI 1.5K	fc	or por	wer supp1 % 1/4W) X2	R412	У 3		VR802	Y2	for			
	SYMBO VR801 PB-77 SYMBO R401 402	4.7K-B 77 DL NO. (RESI 1.5K 1.5K	fc	or pov	wer supp1 % 1/4W) X2 X2	R412 413	¥3	47K	VR802	Y2 X3	for	R423 424	220K 220K	х3
	SYMBO VR801 PB-77 SYMBO R401 402 403	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K	fc	or por	% 1/4W) % 1/4W) X2 X2 X3	R412 413 414	¥3	47K 47K	VR802	Y2 X3 X1	for	R423 424 425	220K 220K 220K 1M	X3 X2 Y3
	SYMBO VR801 PB-77 SYMBO R401 402 403 404	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K	fc	5; +5;	x2 x2 x3 x1	R412 413 414 415	У 3	47K 47K 1K	VR802	Y2 X3 X1 X3	for	R423 424 425 426	220K 220K 1M 1M	X3 X2 Y3 Y3
	SYMBO VR801 PB-77 SYMBO R401 402 403 404 405	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.5K 1.5K	fc	; +5;	<pre>% 1/4W) % 1/4W) % 2 % 2 % 2 % 3 % 1 % 3</pre>	R412 413 414 415 416	Y3	47K 47K 1K 1K	VR802	Y2 X3 X1 X3 X1	for	R423 424 425 426 427	220K 220K 1M 1M 1M	X3 X2 Y3 Y3 Y3
	SYMBO VR801 PB-77 SYMBO R401 402 403 404 405 406	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K	fc	; ±5;	wer supp1 % 1/4W) x2 x2 x3 x1 x3 x2	R412 413 414 415 416 417	Y3	47K 47K 1K 1K 5.6K	VR802	Y2 X3 X1 X3 X1 X3	for	R423 424 425 426 427 428	220K 220K 1M 1M 1M 1M	X3 X2 Y3 Y3 Y3 Y3
	SYMBO VR801 PB-77 SYMBO R401 402 403 404 405 406 407	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K	fc	; ±5;	<pre>% 1/4W) % 1/4W) X2 X2 X3 X1 X3 X2 X3 X2 X3</pre>	R412 413 414 415 416 417 418	У 3	47K 47K 1K 1K 5.6K 5.6K	VR802	Y2 X3 X1 X3 X1 X3 X1	for	R423 424 425 426 427 428 429	220K 220K 1M 1M 1M 1M 1M	X3 X2 Y3 Y3 Y3 Y3 Y2
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 18K 18K 18K	fc	; ±5;	<pre>% wer supp1 % 1/4W) X2 X2 X3 X1 X3 X2 X3 X2 X3 X2</pre>	R412 413 414 415 416 417 418 419	У 3	47K 47K 1K 1K 5.6K 5.6K 390	VR802	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3	for	R423 424 425 426 427 428 429 430	220K 220K 1M 1M 1M 1M 1M 1M	X3 X2 Y3 Y3 Y3 Y3 Y2 Y1
	SYMBO VR801 PB-77 SYMBO R401 402 403 404 405 406 407	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K	fc	; +5;	<pre>% wer supp1 % 1/4W) X2 X2 X3 X1 X3 X2 X3 X2 Y2</pre>	R412 413 414 415 416 417 418 419 420	УЗ	47K 47K 1K 1K 5.6K 5.6K 390 390		Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3	for	R423 424 425 426 427 428 429 430 431	220K 220K 1M 1M 1M 1M 1M 1M	X3 X2 Y3 Y3 Y3 Y3 Y2 Y1 Y2
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K	fc	; +5;	<pre>% 1/4W) % 1/4W) X2 X2 X3 X1 X3 X2 X3 X2 Y2 Y1</pre>	R412 413 414 415 416 417 418 419 420 421	УЗ	47K 47K 1K 1K 5.6K 5.6K 390 390 150K		Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X3	for	R423 424 425 426 427 428 429 430	220K 220K 1M 1M 1M 1M 1M 1M	X3 X2 Y3 Y3 Y3 Y3 Y2 Y1
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K	fc	; +5;	<pre>% wer supp1 % 1/4W) X2 X2 X3 X1 X3 X2 X3 X2 Y2</pre>	R412 413 414 415 416 417 418 419 420	УЗ	47K 47K 1K 1K 5.6K 5.6K 390 390		Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3	for	R423 424 425 426 427 428 429 430 431	220K 220K 1M 1M 1M 1M 1M 1M	X3 X2 Y3 Y3 Y3 Y3 Y2 Y1 Y2
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K	fc	; +5:	<pre>% 1/4W) % 1/4W) X2 X2 X3 X1 X3 X2 X3 X2 Y2 Y1</pre>	R412 413 414 415 416 417 418 419 420 421	У 3	47K 47K 1K 1K 5.6K 5.6K 390 390 150K		Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X3	for	R423 424 425 426 427 428 429 430 431	220K 220K 1M 1M 1M 1M 1M 1M	X3 X2 Y3 Y3 Y3 Y3 Y2 Y1 Y2
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 18K 18K 3.3K 3.3K 3.3K 3.3K	fc	; ±5;	<pre>% ver supp1 % 1/4W) X2 X2 X3 X1 X3 X2 X3 X2 Y2 Y1 X3</pre>	R412 413 414 415 416 417 418 419 420 421		47K 47K 1K 1K 5.6K 5.6K 390 390 150K		Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1		R423 424 425 426 427 428 429 430 431 432	220K 220K 1M 1M 1M 1M 1M 1M 1M	X3 X2 Y3 Y3 Y3 Y3 Y2 Y1 Y2 Y1
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC C401	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8	STORS;	s) +10%	<pre>% wer supp1 % 1/4W) X2 X2 X3 X1 X3 X2 X3 X2 Y2 Y1 X3</pre> <pre>mylar</pre>	R412 413 414 415 416 417 418 419 420 421	Х3	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1	50V	R423 424 425 426 427 428 429 430 431 432	220K 220K 1M 1M 1M 1M 1M 1M 1M	X3 X2 Y3 Y3 Y3 Y3 Y2 Y1 Y2 Y1
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8	STORS; STORS; SOV 50V	s) +10%	<pre>% wer supp1 % 1/4W) X2 X2 X3 X1 X3 X2 X3 X2 Y2 Y1 X3</pre> <pre>mylar</pre> "	R412 413 414 415 416 417 418 419 420 421	X3 Y3	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 1200pF	50V 50V	R423 424 425 426 427 428 429 430 431 432	220K 220K 1M 1M 1M 1M 1M 1M 1M	X3 X2 Y3 Y3 Y3 Y3 Y2 Y1 Y2 Y1
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC C401 402 403	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.0L 1.000pF 1.000pF 1.000pF 1.000pF	STORS; STORS; SOV	s) +10%	<pre>% wer supp1 % 1/4W) X2 X2 X3 X1 X3 X2 Y2 Y1 X3</pre> <pre> mylar ""</pre>	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 1200pF 1200pF	50V 50V 50V	R423 424 425 426 427 428 429 430 431 432	220K 220K 1M 1M 1M 1M 1M 1M 1M	X3 X2 Y3 Y3 Y3 Y3 Y2 Y1 Y2 Y1
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC C401 402 403 404	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.0L NO. (CAPA 1000pF 1000pF 1000pF 1000pF 1000pF	STORS; STORS; SOV 50V	s) +10%	% 1/4W) X2 X2 X3 X1 X3 X2 Y2 Y1 X3	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3 Y2	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 Y2 Y2 Y2 Y2 Y2 Y2 Y2 Y2 Y2 Y2 Y2 Y2 Y2	50V 50V 50V 10V	R423 424 425 426 427 428 429 430 431 432	220K 220K 1M 1M 1M 1M 1M 1M 1M 1M 1M	X3 X2 Y3 Y3 Y3 Y3 Y2 Y1 Y2 Y1
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC C401 402 403	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.0L NO. (CAPA 1000pF 1000pF 1000pF 1000pF 1000pF	STORS; STORS; SOV	s) +5%	% 1/4W) X2 X2 X3 X1 X3 X2 Y2 Y1 X3 ** ** ** ** ** ** ** ** **	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3 Y2 X3	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417 418	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X2 3900pF 1200pF 1200pF 1200pF 4.7uF	50V 50V 50V 10V	R423 424 425 426 427 428 429 430 431 432	220K 220K 1M	X3 X2 Y3 Y3 Y3 Y2 Y1 Y2 Y1 X1 X1 X3 X1
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC C401 402 403 404	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.0L NO. (CAPA 1000pF 1000pF 1000pF 1000pF 0.015uF	STORS; STORS; SOV SOV SOV	s) +5%	<pre>% wer supp1 % 1/4w) X2 X2 X3 X1 X3 X2 X3 X2 Y1 X3</pre> <pre>% mylar """ """ """ """</pre>	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3 Y2 X3 X3	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417 418 419	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 Y2 Y2 Y2 Y2 Y2 Y2 Y2 Y2 Y2 Y2 Y2 Y2 Y2	50V 50V 50V 10V 10V 35V	R423 424 425 426 427 428 429 430 431 432	220K 220K 1M	X3 X2 Y3 Y3 Y3 Y2 Y1 Y2 Y1 X1 X1 X3 X1 X3
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC C401 402 403 404 405	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 18K 18K 3.3K 3.3K 3.3K 0L NO. (CAPA 1000pF 1000pF 1000pF 1000pF 0.015uF 0.015uF	STORS; STORS; SOV SOV SOV SOV	s) +5%	x2 x2 x3 x1 x3 x2 x2 x3 x2 x2 x3 x4 x3 x4 x3 x4	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3 Y2 X3	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417 418	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X1 X2 Y1 Y2 Y2 Y2 Y2 Y4 Y4 Y4 Y4 Y4 Y4 Y4 Y4 Y4 Y4 Y4 Y4 Y4	50V 50V 50V 10V 10V 35V 35V	R423 424 425 426 427 428 429 430 431 432	220K 220K 1M	X3 X2 Y3 Y3 Y3 Y2 Y1 Y2 Y1 X1 X1 X3 X1 X3
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 SYMBC C401 402 403 404 405 406 407	4.7K-B 77 OL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.0L 1.000pf	50V 50V 50V 50V 50V 50V 50V 50V	s) +5%	<pre>% wer supp1 % 1/4w) X2 X2 X3 X1 X3 X2 X3 X2 Y1 X3</pre> <pre>% mylar """ """ """ """</pre>	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3 Y2 X3 X3	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417 418 419	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 Y2 Y2 Y2 Y2 Y2 Y2 Y2 Y4 Y4 Y4 Y4 Y4 Y4 Y4 Y4 Y4 Y4 Y4 Y4 Y4	50V 50V 50V 10V 10V 35V	R423 424 425 426 427 428 429 430 431 432	220K 220K 1M	X3 X2 Y3 Y3 Y3 Y2 Y1 Y2 Y1 X1 X1 X3 X1 X3
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 C401 SYMBC C401 402 403 404 405 406 407 408	4.7K-B 77 OL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.0L 1.000pf 1.000	50V 50V 50V 50V 50V 50V 50V 50V 50V	s) +55 +10%	x2 x2 x3 x1 x3 x2 x2 x3 x2 x2 x3 x4 x3 x4 x3 x4	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3 Y2 X3 X3 Y3 Y3	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417 418 419 420	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X2 3900pF 1200pF 1200pF 1200pF 1200pF 1200pF 1200pF 1200pF 1200pF 1200pF	50V 50V 50V 10V 10V 35V 35V	R423 424 425 426 427 428 429 430 431 432 **	220K 220K 1M	X3 X2 Y3 Y3 Y3 Y2 Y1 Y2 Y1 X1 X1 X3 X1 X3
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.0L NO. (CAPA 1.000pF 1.000pF 1.000pF 1.000pF 1.000pF 1.000pF 0.015uF 0.047uF 0.047uF 0.047uF 0.015uF	50V 50V 50V 50V 50V 50V 50V 50V 50V 50V	s) +50%	wer supp1 % 1/4W) X2 X2 X3 X1 X3 X2 Y1 X3 X2 Y1 X3	R412 413 414 415 416 417 418 419 420 421	X3 X3 X3 X2 X3 X3 Y3 Y3 Y3 Y3	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417 418 419 420 421 422	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X1 X3 X1 X1 X3 X1 4.7uF 1uF 1uF 33pF 33pF	50V 50V 50V 10V 35V 35V 50V	R423 424 425 426 427 428 429 430 431 432 **	220K 220K 1M	X3 X2 Y3 Y3 Y3 Y2 Y1 Y2 Y1 X1 X1 X3 X1 X3 X2 X3
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC C401 402 403 404 405 406 407 408 409 410 401 402 403 404 405 406 407 408 409 410	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 18K 18K 3.3K 3.3K 3.3K 0L NO. (CAPA 1000pF 1000pF 1000pF 1000pF 0.015uF 0.047uF 0.047uF 0.047uF 0.015uF 0.015uF 0.015uF	50V 50V 50V 50V 50V 50V 50V 50V 50V 50V	s) +50%	wer supp1 % 1/4W) X2 X2 X3 X1 X3 X2 X3 X2 Y1 X3 X2 Y1 X3	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3 Y2 X3 Y3 Y3 Y3 X3 X3 X3 X3 X3	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417 418 419 420 421 422 423	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X1 X1 X3 X1	50V 50V 50V 10V 35V 35V 50V 50V	R423 424 425 426 427 428 429 430 431 432	220K 220K 1M	X3 X2 Y3 Y3 Y3 Y2 Y1 Y2 Y1 X1 X1 X3 X1 X3 X2 X3 X1 X3
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC C401 402 403 404 405 406 407 408 409 410 411	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.0L 1.000pf	50V 50V 50V 50V 50V 50V 50V 50V 50V 50V	s) +50%	wer supp1 % 1/4W) X2 X2 X3 X1 X3 X2 X3 X2 Y2 Y1 X3	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3 Y2 X3 X3 Y3 Y3 X3 X3 X3 X3	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417 418 419 420 421 422 423 424	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X1 X3 X1 X1 X3 X1 X1 X3 X1 X1 X7 X1 X7 X1 X7 X7 X1 X7	50V 50V 50V 10V 35V 35V 50V 50V 50V	R423 424 425 426 427 428 429 430 431 432 	220K 220K 1M	X3 X2 Y3 Y3 Y3 Y2 Y1 Y2 Y1 X1 X1 X3 X1 X3 X2 X3 X1 X3 X2
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC C401 402 403 404 405 406 407 408 409 410 411 412	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.0L 1.000pf	50V 50V 50V 50V 50V 50V 50V 50V 50V 50V	s) +5%	wer supp1 % 1/4W) X2 X2 X3 X1 X3 X2 Y2 Y1 X3 ** ** ** ** ** ** ** ** **	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3 Y2 X3 X3 Y3 Y3 X3 X1 X1	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417 418 419 420 421 422 423 424 425	Y2 X3 X1 X1 X3 X1 X1 X7 X1 X7	50V 50V 50V 10V 10V 35V 35V 50V 50V 50V	R423 424 425 426 427 428 429 430 431 432 	220K 220K 1M	X3 X2 Y3 Y3 Y3 Y2 Y1 Y2 Y1 X1 X1 X3 X1 X3 X1 X3 X2 X3 X1 X3 X2 X3
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC C401 402 403 404 405 406 407 408 409 410 411	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.0L 1.000pf	50V 50V 50V 50V 50V 50V 50V 50V 50V 50V	s) +10%	wer supp1 % 1/4W) X2 X2 X3 X1 X3 X2 Y2 Y1 X3 mylar """"""""""""""""""""""""""""""""""""	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3 Y2 X3 X3 Y3 Y3 X3 X3 X3 X3	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417 418 419 420 421 422 423 424	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X1 X3 X1 X1 X3 X1 X1 X3 X1 X1 X7 X1 X7 X1 X7 X7 X1 X7	50V 50V 50V 10V 35V 35V 50V 50V 50V	R423 424 425 426 427 428 429 430 431 432 	220K 220K 1M	X3 X2 Y3 Y3 Y3 Y2 Y1 Y2 Y1 X1 X1 X3 X1 X3 X2 X3 X1 X3 X2
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC C401 402 403 404 405 406 407 408 409 410 411 412 413	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 1.8K 1.8K 1.0L 1.000pf	50V 50V 50V 50V 50V 50V 50V 50V 50V 50V	s) +10%	wer supp1 % 1/4W) X2 X2 X3 X1 X3 X2 Y2 Y1 X3 mylar """"""""""""""""""""""""""""""""""""	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3 Y2 X3 X3 Y3 Y3 X3 X1 X1	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417 418 419 420 421 422 423 424 425	Y2 X3 X1 X1 X3 X1 X1 X7 X1 X7	50V 50V 50V 10V 10V 35V 35V 50V 50V 50V	R423 424 425 426 427 428 429 430 431 432 	220K 220K 1M	X3 X2 Y3 Y3 Y3 Y2 Y1 Y2 Y1 X1 X1 X3 X1 X3 X1 X3 X2 X3 X1 X3 X2 X3
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC C401 402 403 404 405 406 407 408 409 410 411 SYMBC SYMB	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 1.8K 1.8K 1.8K 3.3K 3.3K 3.3K 0L NO. (CAPA 1000pF 1000pF 1000pF 1000pF 0.015uF 0.015uF 0.047uF 0.047uF 0.047uF 0.015uF 1200pF 1200pF 1200pF 1200pF 3900pF	STORS; STORS; SOV 50V 50V 50V 50V 50V 50V 50V 5	s) +55 **10% "" "" "" "RS)	x2 x2 x3 x1 x3 x2 x2 x3 x2 x2 x3 x2 x1 x3 x3 x2 x1 x3 x3 x2 x1	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3 Y2 X3 Y3 Y3 Y3 X3 X1 X1 X1	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417 418 419 420 421 422 423 424 425 426	Y2 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X3 X1 X1 X3 X1 X1 X3 X1 X1 X3 X1 X1 X7 X1 X7 X1 X7 X7 4.7uF 1uF 1uF 33pF 33pF 4.7pF 4.7pF 22uF 22uF	50V 50V 50V 10V 35V 35V 50V 50V 50V 50V 50V	R423 424 425 426 427 428 429 430 431 432 	220K 220K 1M	X3 X2 Y3 Y3 Y3 Y2 Y1 Y2 Y1 X1 X1 X3 X1 X3 X2 X3 X1 X3 X2 X3 X2 X3 X1 X3 X2
	SYMBC VR801 PB-77 SYMBC R401 402 403 404 405 406 407 408 409 410 411 SYMBC C401 402 403 404 405 406 407 408 409 410 411 412 413	4.7K-B 77 DL NO. (RESI 1.5K 1.5K 1.5K 1.5K 1.8K 18K 18K 3.3K 3.3K 3.3K OL NO. (CAPA 1000pF 1000pF 1000pF 1000pF 1000pF 0.015uF 0.015uF 0.047uF 0.047uF 0.047uF 0.015uF 1200pF 1200pF 1200pF 3900pF OL NO. (TRAM	50V 50V 50V 50V 50V 50V 50V 50V 50V 50V	s) +50% """"""""""""""""""""""""""""""""""""	wer supp1 % 1/4W) X2 X2 X3 X1 X3 X2 Y2 Y1 X3 mylar """"""""""""""""""""""""""""""""""""	R412 413 414 415 416 417 418 419 420 421	X3 Y3 X3 Y2 X3 X3 Y3 Y3 X3 X1 X1	47K 47K 1K 1K 5.6K 5.6K 390 390 150K	C414 415 416 417 418 419 420 421 422 423 424 425	Y2 X3 X1 X1 X3 X1 X1 X7 X1 X7	50V 50V 50V 10V 35V 50V 50V 50V 50V	R423 424 425 426 427 428 429 430 431 432 	220K 220K 1M	X3 X2 Y3 Y3 Y3 Y2 Y1 Y2 Y1 X1 X1 X3 X1 X3 X1 X3 X2 X3 X1 X3 X2 X3

PB-77	<u>8</u>								
SYMBO:	L NO. (RESIST	ORS; [±] 5% 1/4W)							
R301	4.7K	х3	R323	68K		X1	R343	5.6K	х3
302	4.7K	Y3	324	68K		Y1	344	5.6K	Y3
303	470K	х3	325	56K		X2	345	1.5K	X2
304	470K	Y3	326	56K		Y2	346	1.5K	Y2 X2
305	560K	X3	327	120K		X2	347 348	27K 27K	Y2
306	560K	Y3	328	120K 100K		Y2 X2	349	18K	x3
307	47K	X3 Y3	329	100K		Y2	350	18K	Y3
308	47K 150K	X3	331	120K		X2	351	4.7K	X2
310	150K	Y3	332	120K		Y 2	352	4.7K	Y2
311	100K	x3	333	82K		X1	353	3.9K	х3
312	100K	Y3	334	82K		Y1	354	3.9K	Y3
313	6.8K	Х3	335	100K		X2	355	1M	X2
314	6.8K	Y3	336	100K		Y2	356	1M	Y2
315	390	X3	337	1M		X1	357	1M	X2
316	390	Y3	338	1M		Y1	358	1M 1.5M	Y2 X3
319	820K	X1	339	1M		X1	359	1.5M 1.5M	Y3
320	820K	Y1	340	1M		Y1 X2	360	I.Jri	13
321	330K	X1 Y1	341 342	3.9K 3.9K		Y2			}
322	330K	11	342	3.31		12			
SYMBO	L NO. (CAPACI	TORS)							
C301	4.7uF 10	V tantalu	m	х3	C319	1000pF 50V	- 10%	mylar	х1
302	4.7uF 10	v ''		Y3	320	1000pF 50V	11	11	Y1
303	2.2uF 35			х3	321	5600 _P F 50V	+	11	X1
304	2.2uF 35	V +		Y3	322		±10%	11	Y1
305	33pF 50			х3	323	8200 _P F 50V	"	"	X2
306	33pF 50		_	Y3	324	8200pF 50V	11	11	Y2
307	47uF 10		lytic	X3	325	0.068uF 50V	11	11	X2 Y2
308	47uF 10	V	_	Y3 X3	326	0.068uF 50V 3300pF 50V	11	11	X2
309	10uF 10 10uF 10		н	х3 ҮЗ	328	3300pr 50V 3300pF 50V		11	Y2
313	0.047uF 50	+		X1	329	0.068uF 50V	11	F1	x3
314	0.047uF 50	•		Y1	330	0.068uF 50V	11	11	Y3
315	330pF 50			X1	331	1uF 25V		electrolytic	х3
316	330pF 50			Y1	332	1uF 25V		11	Y3
317	2700pF 50			X1	333	10uF 50V		11	X1
318	2700pF 50	V " "		Y1	334	10uF 50V		11	Y1
CVMDO	I NO (EDANGI	amon a)							
	L NO. (TRANSI								77.0
Q301	2SC1345 (X3	Q303	2SA640 (F)		r equalizer	X3 Y3
302	2SC1345 (E,F) linear equa	Lizer	Y3	304	2SA640 (F)	linea	ır equalizer	13
DD 70	0								
PB-72	8								
SYMBO	L NO. (RESIST	ORS; +5% 1/4W)							
R201	220K	Y4	R207	1M		У3	R213	6.8K	Y2
202	220K 220K	Y3	208	1M		x3	214	6.8K	Y2
202	8.2K	Y4	209	560K		X3	215	1M	X2
204	8.2K	Y3	210	560K		x3	216	1M	X2
205	10K	Y4	211	470K		X3	217	1M	Y2
206	10K	х3	212	470K		X3	218	1M	х3
r	L NO. (CAPACI				1 1		+		
C201		50V ⁺ 0.5% mylar		X4	C210	0.15uF 50V	±10%	mylar	Y2
202		50V " "	_	Х3	211	5600pF 50V	11	11	Y2
	2.2uF	25V tanta	lum	Х3	212	5600pF 50V	+ -10%	11	Y2
203		23V		X3 X3	213	3900pF 50V	-10%	11	Y2 Y2
203 204		0.577 11		x -s	214	3900pF 50V			1/
203 204 205	2.2uF	25V "			1 21 5	100-12 5017	11	coromic	
203 204 205 206	2.2uF 2.2uF	25V "		Х3	215	100pF 50V	11	ceramic	Y4
203 204 205 206 207	2.2uF 2.2uF 0.068uF	25V 25V '' 50V -10% mylar		X3 Y3	216	100pF 50V		tt .	Y4 Y3
203 204 205 206 207 208	2.2uF 2.2uF 0.068uF 0.068uF	25V 25V + 50V -10% mylar 50V " "		X3 Y3 Y3					Y4
203 204 205 206 207	2.2uF 2.2uF 0.068uF 0.068uF	25V 25V + 50V -10% mylar 50V " "		X3 Y3	216	100pF 50V		tt .	Y4 Y3
203 204 205 206 207 208 209	2.2uF 2.2uF 0.068uF 0.068uF	25V " " 50V -10% mylar 50V " " 50V " "		X3 Y3 Y3	216	100pF 50V		tt .	Y4 Y3
203 204 205 206 207 208 209	2.2uF 2.2uF 0.068uF 0.068uF 0.15uF	25V " 25V - 10% mylar 50V " " 50V " "	p	X3 Y3 Y3	216	100pF 50V	"	tt .	Y4 Y3

R601, 701 602, 702 603, 703 604, 704 605, 705 606, 706 607, 707 608, 708	1K 3Y 100K 3X 220 3X 220 3Y 15K 3X 33K 3Y 8.2K 3X 3.3K 3Y	R609, 709 610, 710 611, 711 612, 712 613, 713 614, 714 615, 715 616, 716	3.3K 180 10K 1/2W 100 1/2W 1K 47K 22 150	3Y 3Y 2X 2Y 3Y 2Y 3X 2X	R617, 717 618, 718 619, 719 620, 720 621, 721 622, 722	68K 100 1/2W 100 1/2W 0.5 5W 0.5 5W 10 1/2W	2X 1Y 2X 1Y 2Y 1Y
C601, 701 602, 702 603, 703 604, 704 605, 705 606, 706 607, 707 608, 708 609, 709 610, 710 611, 711	10uF 10V 220pF 33uF 10V 33pF 22pF 470pF 47uF 10V 0.022uF	3Y 3Y 3X 3X 3X 3X 2Y 3X 1X 1Y	C612, 712 613, 713 614, 714 615, 715 616, 716 617, 717 618, 718 619, 719 620, 720 621, 721 622, 722	10F 10F 10F 0.0lu 2.2u 2.2u 0.0lu 0.0lu	oF oF oF oF oF 500V oF 68V oF 63V oF 500V oF 500V	1X 1X 2X 3Y 3Y 1Y 2Y 1Y 2Y 1Y	
Q601, 701 602, 702 603, 703 604, 704 605, 705 D601, 701 602, 702 603, 703 604, 704	2SA620 2SA620 2SC1103A 2SC1103A 2SB537 SV-03 SV-02 WZ-120	3Y 3Y 3X 2X 2X 1X 1X 1X 2X 1X	Q606, 706 607, 707 608, 708 609, 709 VR601, 70	2SAC 2SAC 2SAC	762 1079 579 (-B	1Y 2Y 1X 3X	

OTHERS

SYMBOL NO. (RESISTORS; +5% 1/4W unless noted otherwise)

1	R001	180K	R014 120K	
1	002	180K	015 3.3K	
1	003	12K	016 3.3K	
	004	12K	017 6.8K	
	005	150K	018 6.8K	
	006	150K	019 680	1W
	007	150K	020 680	1W
i	800	150K	021 560K	
-	009	4.7K	022 560K	
	010	4.7K	023 560K	
	011	180K	024 560K	
	012	180K	025 3.3K	
	013	120K	026 3.3K	

SYMBOL NO. (CAPACITORS)

C001	0.1uF	12V +80%-20%	ceramic	C005	15000uF	63V	electrolytic
002	0.1uF	12V +80%-20%	11	006	15000uF	63V	II
003	0.1uF	12V +80%-20%	11	007	0.047uF		
004	0.1uF	12V +80%-20%	11	008	0.022uF		

SYMBOL NO. (VARIABLE RESISTORS)

VR1	50K-B	2-gang for tuner level set	VR4	100K-A	2-gang for microphone level
VR2	50K-A	2-gang for volume control	VR5	50K-B	2-gang for audio attenuator
VR3	100K-A	for balance control	VR6	100K-B	2-gang for bass control
	100K-C	2-gang	VR7	50K-B	2-gang for treble control

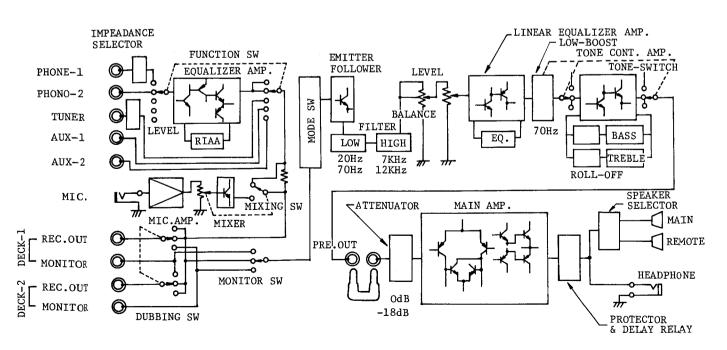
SYMBOL NO. (SWITCHES)

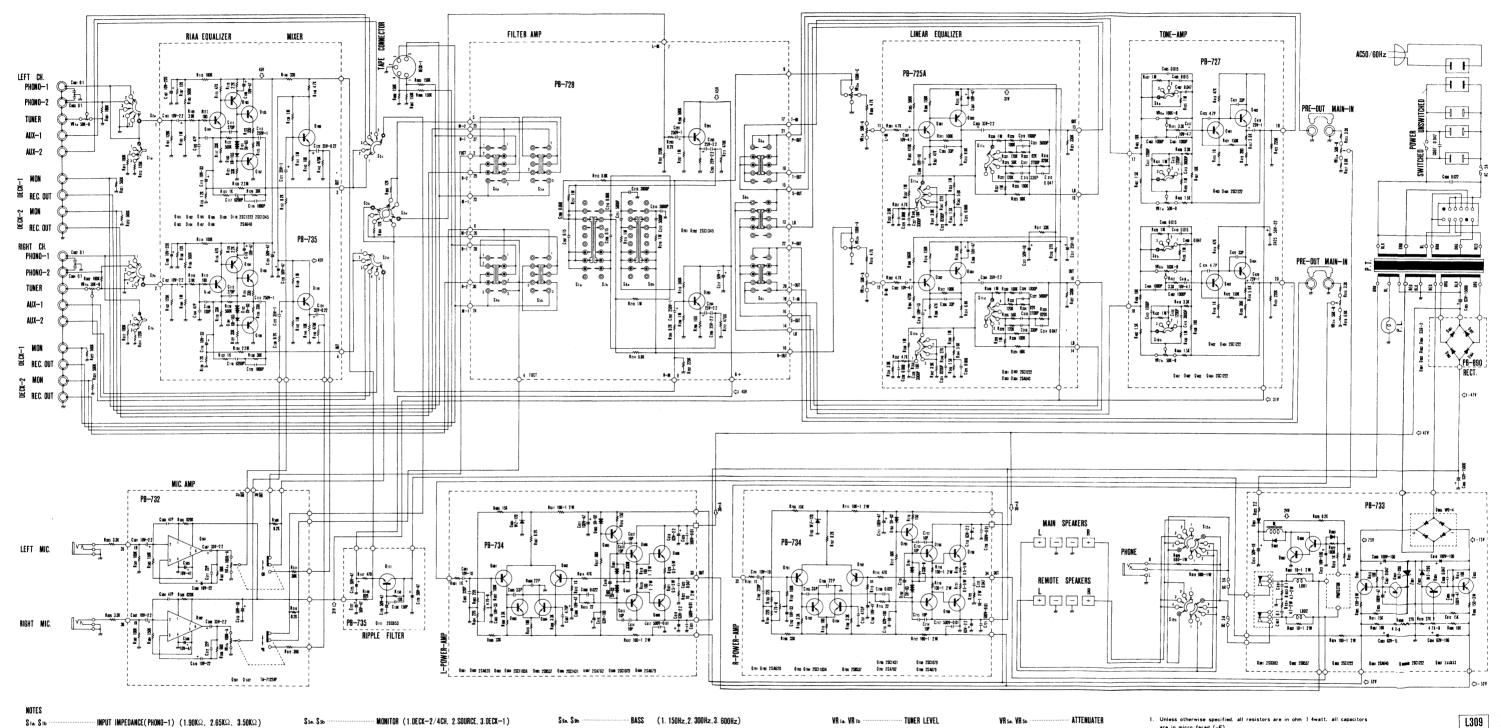
S1	rotary switch	2-circuit,	3-contact	input impedance	S7	lever switch	2	3	low cut
S2	rotary	4	5	function	S8	lever	2	3	high cut
S3	rotary	2	5	mode	S9	rotary	2	3	bass
S4	lever	2	3	dubbing	S10	rotary	2	3	treble
S5	lever	2	3	monitor	S11	rotary	4	5	linear EQ
S6	lever	3	3	defeat	S12	rotary	4	4	speakers
1 1						push switch	1	1	power
L					1	<u> </u>			

MISCELLANEOUS

PB-723 724 728A 729 732 733 777 778 890	printed circuit board	for R.I.A.A. equalizer power amp filter amplifier for fuse microphone amp power supply & protection tone amplifier Linear Equalizer rectifier
P-1945	power transformer	· · · · · · · · · · · · · · · · · · ·

BLOCK DIAGRAM FOR MODEL L-309





SIA SID INPUT IMPEDANCE(PHONO-1) (1.90K Ω , 2.65K Ω , 3.50K Ω) FUNCTION (1.PHONO-1, 2.PHONO-2, 3.TUNER, 4.AUX-1, 5.AUX-2) Sza. Szo. Szc. Szd MODE (1.L, 2.R, 3.MONO L+R, 4.STEREO, 5.STEREO-REVERSE) S3a, S3b DUBBING (1. 2101, 2.SOURCE, 3.1 TO 2)

MONITOR (1.DECK-2/4CH, 2.SOURCE, 3.DECK-1) \$6a. \$6b. \$6c DEFEAT (1.DEFEAT, 2.NORMAL, 3.TONE + LOW BOOST) LOW CUT (1. 20Hz, 2.NORMAL, 3. 70Hz) \$7a. \$7b ... S8a. S8b · HIGH CUT (1. 12KHz, 2.NORMAL, 3. 7KHz)

BASS (1. 150Hz, 2. 300Hz, 3. 600Hz) TREBLE (1. 1.5KHz, 2. 3KHz, 3. 6KHz) \$ 10a. \$ 10b \$11a. \$11b. \$11c. \$11d ... LINEAR EQUALIZER (1.2. UP TILT, 3. FLAT, 4.5. DOWN TILT) \$ 12a. \$ 12b SPEAKERS (1.0FF, 2.REMOTE, 3.MAIN, 4.MAIN & REMOTE)

VR 2a. VR 2b · VOLUME CONTROL BALANCE CONTROL VR 3a. VR 3b MIC LEVEL (PULL ON) VR 4a, VR 4b

BASS CONTROL TREBLE CONTROL VR 7a. VR 7b

Unless otherwise specified, all resistors are in ohm 1 4watt, all are in micro farad (µF)
 Transistors. IC and diodes may be replaced with any types having ratings.
 There might be slight changes in the actual set.